

Opener

Simplify, then evaluate where possible.

a) $9^{15} \div 9^{15}$ b) $12x^0$ c) $12x^{10} \div 4x^{-3}$

d) $\left(\frac{2x^4}{3y^5}\right)^3$ e) $(x^{10})(y^{11})$ f) $-\frac{1}{3} + \frac{2}{5} =$

g) $\frac{3}{7} \times 1\frac{1}{5}$

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Opener

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Vocabulary Matching

In the following table, match the word to its definition and then to an example using a straight line to connect.

WORD	DEFINITION	EXAMPLE
Constant	A letter used to represent a value that can change or vary.	In $2x + 5$, we call "5" the
Variable	A number or a variable, or the product of numbers and variables.	In the expression $2t + 3$, "t" is called a
Exponent	A term that contains no variables	The expression $5x + 3$ has two
Term	Use of a raised number to denote repeated multiplication of a base.	In 3^4 , the is 4.

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Introduction to Polynomials

Now, let us look at the tiles you have – called algebra tiles. We will label them as:



We can still use the placemat from lesson 1.

Like terms in algebra have the same variables raised to the same exponents.

Examples: $2x$, $5x$ or $-7y$, $12y$ or $6x^2$, $-x^2$

Unlike terms in algebra have different variables, or the same variable but different exponents.

Examples: $12x$, $3y$, $-15x^2$

A monomial is a number or variable or the product of numbers and variables.

Examples: 6 or x or $3x$

A polynomial is a monomial or the sum of monomials.

A polynomial with 2 terms is called a binomial. Example: $4x+1$

A polynomial with 3 terms is called a trinomial. Example: x^2-5x+7

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Simplify by collecting like terms.

$$\begin{aligned} 5a - 7b + 8a - 11b \\ = 5a + 8a - 7b - 11b \\ = 13a - 18b \end{aligned}$$

$$7x^2 + 3x - 8x + 4x^2$$

$$3x + 2 - 2x + 7$$

$$3z^3 - 2z + z^2 - 5z^3 - 2z$$

$$2x^2 - 5x + 1 - x^2 + 3x + 6$$

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$$\begin{aligned} 5a - 7b + 8a - 11b \\ = 5a + 8a - 7b - 11b \\ = 13a - 18b \end{aligned}$$

$$7x^2 + 3x - 8x + 4x^2$$

$$3z^3 - 2z + z^2 - 5z^3 - 2z$$

+ and -

$$\begin{aligned} 3x + 2 - 2x + 7 \\ 3x - 2x + 2 + 7 \\ 1x + 9 \end{aligned}$$

$$\begin{aligned} 2x^2 - 5x + 1 - x^2 + 3x + 6 \\ 1x^2 - 2x + 7 \end{aligned}$$

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$$3x + 7y - 5x - 10y + 20x$$

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$$3x + 7y - 5x - 10y + 20x$$

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Distributive Property

$$i) 3(x^2 + xy)$$

$$ii) 3x(2x^2 + x)$$

$$iii) -3ab(4a^3b^2 + 2a^2b^2 - 3abc)$$

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$$-12a^4b^3 - 6a^3b^3 + 9a^2b^3c$$

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Greatest Common Factor (\div)

$$i) 2x^2y + 4x$$

$$ii) 3a^3b^2 + 6a^2b + 27ab$$

$$iii) 4x^3y^2 + 16x^2y^2 - 8x$$

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Greatest Common Factor (\div)

$$i) 2x^2y + 4x$$

$$2x[xy + 2]$$

$$ii) 3a^3b^2 + 6a^2b + 27ab$$

$$3ab[a^2b + 2a + 9]$$

$$iii) 4x^3y^2 + 16x^2y^2 - 8x$$

$$4x[x^2y^2 + 4xy^2 - 2]$$

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Homework
Worksheet q. 1-5 (odds)

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